

SISO-PN-014-2015

**Product Nomination
for**

**Space Reference
Federation Object Model**

Version 1.0

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Revision History

Version	Section	Date (MM/DD/YYYY)	Description
V1.0	All	03/03/2015	original version

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SISO Product Nomination for Space Reference Federation Object Model

SISO-PN-014-DRAFT

1. Product title *

Space Reference Federation Object Model (FOM)

This standard consists of two parts:

- a) The SISO Standard for the Space Reference FOM Federation Agreement. This is a natural language, human readable overview, description and specification of the FOM. This document will be made available at:
<http://www.sisostds.org/ProductsPublications/Standards/SISOStandards.aspx>
- b) The "Space Reference FOM". This is a set of computer-interpretable HLA IEEE 1516-2010 FOM modules (xml), intended for consumption by HLA runtime infrastructure and other software tools. These XML files will be referenced in the Standard and made available at <http://www.sisostds.org/Schemas.aspx>

2. Proponent name(s) and contact information

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3. Type of product(s) (*Balloted Products)

X	Standard*
	Guidance*
	Reference
	Administrative

4. Product description

The Space Reference FOM shall support interoperability for space simulations. This includes federations executing in real-time as well as federations executing in logical-time (including as-fast-as-possible). The primary focus is on training, analysis, mission support and engineering although other types of usage, like test and concept exploration may also be supported to some degree.

5. Identification of the community to which product applies

Users and developers of international space federations, with a focus on planetary space exploration including Earth.

6. Problem(s) and/or issue(s) that the proposed product addresses

a) Provide details on the specific need or requirement for this product in the community.

There is currently no reference FOM that addresses space exploration, since for example the RPR FOM is restricted to defense operations in a geocentric environment running in real time.

b) Provide details on the discussion of the need for this product in the community.

The need for a standard has been discussed extensively during the SISO Smackdown/ Simulation Exploration Experience (SEE) as well as several SISO Space Community sessions. The general agreement has been that there is a need for this product.

c) Have you investigated similar products in the community to ensure no overlap exists?

No other FOM exists. The RPR FOM has been evaluated but does not meet the requirement, as described above.

7. Indication of the maturity of the product

HLA is increasingly used in the Space domain to meet the requirements for simulation interoperability in the US, Europe and to some extent in Asia. So far different organizations and projects have developed incompatible FOMs to meet specific needs, but increasing the long-term cost for interoperability.

a) Detailed description on HOW the problem/issue will be solved (approach)

A Federation Agreement document with an HLA FOM, according to the IEEE 1516-2010 standard (or later versions) will be developed.

b) Brief discussion on the maturity of the proposed product.

Experiences from NASA and other organizations have been reused in the SISO Smackdown (now SEE) project to create a core Space Reference FOM. Approximately ten different university teams have successfully used this FOM for four consecutive integration projects during the last four years.

c) Brief discussion on alternative approaches to the proposed product

HLA is the only SISO standard format suitable for developing an information exchange and time synchronization standard that meets the requirements of the space community.

d) Provide examples of prototypes of the proposed product or reasons why this product will not be prototyped.

The product has been prototyped as part of SISO activities as described above. Prototypes may be tested at coming SEE events.

e) What impact will the proposed product have on the M&S community?

The a priori interoperability and reuse of space simulations will be greatly improved.

f) What impact will this proposed product have on the SISO community?

This standard will be valuable to SISO members doing space simulation. It will also attract new SISO members from the Space domain.

g) What is the impact to the community on the LACK of this proposed product?

The lack of a standards product limits the ability for industry, government and academia to build interoperable federations.

h) What are the domain implications for this proposed product?

Increased interoperability and reuse between space simulations.

i) State which SIW conference forum(s) take an active interest in the development of this proposed product?

M&S Specialty Track

8. Planned compliance testing

None

9. Schedule of product development milestones including reviews and reports

Dates	Activity	Duration
Feb 2015 – Apr 2015	Product Nomination processed and approved	3 months
May 2015 – Mar 2016	Produce Draft Standard in approved format	10 months
Aug 30 - 4 Sep 2015	Conduct meeting at 2015 Fall SIW	1 week
Apr 2016	Request SAC approval to enter ballot product phase Provide complete Circulation Package to SAC	1 month
Apr - May 2016	Conduct meeting at 2016 Simulation Exploration Experience event (SpringSim 2016)	1 week
May 2016 – Jun 2016	SAC conduct Initial Product Ballot	2 months
Jul 2016 – Oct 2016	Conduct ballot group comment resolution, update Comment Tracking System, revise Standard	4 months

Dates	Activity	Duration
Sep 2016	Conduct meeting at 2016 Fall SIW	1 week
Nov 2016	Produce complete Product Approval Package and provide to SAC	1 month
Dec 2016 – Jan 2017	SAC and EXCOM Processing	2 months
Feb 2017	SAC publish approved Standard	1 month

10. Candidate volunteers for the product development effort

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11. Suggested product periodic review cycle (timeline)

In accordance with SISO policy and procedures. Most importantly, the products should be reviewed as often as technology changes and/or new information becomes available.